

REMARKS

Claims 1 – 2 remain in this application.

Claims 1 and 2 were rejected under Section 102(b) as being anticipated by either Huang (U.S. Patent No. 4,930,264) or Courson et al. (U.S. Patent No. 5,609,516, hereinafter "Courson"). Applicant respectfully traverses this rejection. Specifically, applicant disagrees that Huang and Courson disclose all of the limitations of claim 1.

Turning first to Huang, Huang discloses a grinding type polishing device. Applicant maintains, however, that Huang does not teach or suggest a sanding pad assembly including an annular frame having a circumferential side wall including first and second circumferential axially spaced edges, one of the edges being a lower edge of the side wall and being attached to the backing pad, and a back wall extending generally radially inward from the other of the circumferential edges and having an opening in vacuum pressure flow communication with a suction housing, as claimed in the present application. In Huang, the lower casing 6 pointed out by the Examiner as being an annular frame is not the same as, nor an obvious variation of, the annular frame of the present invention. As applicant has previously stated, the lower casing 6 of Huang is merely a tubular ring disposed between a polishing plate 7 and an intermediate casing 5. The lower casing 6 contacts the polishing plate 7 (i.e., backing pad) and is held in place by being engaged with the intermediate casing 5. In contrast to the present invention, the lower casing 6 of Huang is simply not attached to the backing pad at a lower edge thereof. In fact, in Huang the lower casing is not attached to the polishing plate at any location.

Applicant respectfully disagrees with the examiner's contentions regarding the disclosure of Huang. There is simply no teaching or suggestion in the description, drawings, or claims of Huang to support the examiner's argument that the lower casing 6, if considered an annular frame, is attached to a backing pad at a lower circumferential edge thereof. Turning first to the drawings, in Fig. 1, it is clear that the lower casing 6 is not attached to the polishing plate 7. There are no fasteners shown attaching the lower casing 6 to the polishing plate 7, while there are fasteners shown attaching other members of the

polishing apparatus together. If the lower casing 6 were attached to the polishing plate, fasteners would be shown. Similarly, Fig. 2 does not show that the lower casing 6 is fastened to the polishing plate 7. Moreover, the cross-sectional view of Fig. 3 clearly shows that a lower edge of the lower casing 6 merely contacts the polishing plate 7 and is not attached thereto. Again, there are no fasteners attaching the lower casing 6 to the polishing plate 7, while there are fasteners attaching other elements, such as the intermediate casing 5 to the top cover 1. Furthermore, it can be seen from Figs. 1 and 3 that the polishing plate 7 is operatively connected to the driving shaft 3 while the lower casing 6 is engaged with the intermediate casing 5. Actuation of the driving shaft 3 rotates the polishing plate 7 underneath the lower casing 6. While the polishing plate 7 rotates, the lower casing 6 does not, and as seen from the drawings, it would be impossible for the lower casing 6 to rotate with the polishing plate 7. For one, the lower casing 6 is not attached to the polishing plate 7, and second, the lower casing 6 is engaged with the intermediate casing 5, which in turn is fixed by fasteners to the top cover 1. If the lower casing 6 were to rotate, it would either break itself apart against the intermediate casing 5, or would cause the intermediate casing 5 to break free from the top cover 1, destroying the apparatus. There is no way that the lower casing 6 could freely rotate about the intermediate casing 5. As an aside, Fig. 4 is irrelevant to the present discussion.

Turning next to the specification, it is first disclosed that the lower casing 6 is made of rubber (column 1, lines 59 - 60). Then, it is disclosed that the intermediate casing 5 is secured to the underside peripheral edge of the top cover 1 by screws and that the lower casing 6 is disposed partially externally of the intermediate casing 5 (column 2, lines 8 - 11). Further, a polishing plate 7 is disposed at the bottom of the lower casing 6 (column 2, lines 12 - 13) (note that it is not disclosed that the lower casing 6 is attached to the polishing plate 7). Next, the specification discusses the operation of the apparatus. High pressure air actuates a pneumatic motor (not shown in the drawings) to rotate together with the driving shaft 3, which in turn rotates the debris-intaking rotor 2 and the polishing plate 7 (column 2, lines 21 - 35). The rotation of the polishing plate 7 produces pressure

differentials that cause air and debris to be sucked into a second chamber defined by the lower casing 6 into the first chamber 14, through the debris-intaking rotor 2, and then out the outlet port 15 in the top cover 1 (column 2, lines 36 - 45). Nowhere in the specification is the lower casing 6 described as being attached to the polishing plate 7. Further, it is apparent that the lower casing 6 is not attached to the polishing plate 7 because the lower casing 6 does not rotate when the motor is actuated, while the polishing plate 7 does. Finally, since the lower casing 6 is made of rubber and is engaged with the intermediate casing 5, if the lower casing 6 were to spin with the polishing plate 7, it would quickly deform and tear apart due to frictional forces between the lower casing 6 and the intermediate casing 5 that would tend to inhibit movement of the lower casing 6 about the intermediate casing 5. Rubber is known to have high frictional resistance on dry surfaces such that the engagement of the rubber lower casing 6 with the intermediate casing 5 would strongly inhibit the movement of the lower casing 6 against the intermediate casing 5.

Turning finally to the claims of Huang, of which there are two, the only portion of the claims relevant to the present discussion states as follows: "said lower casing is disposed partially externally over said intermediate casing so to form a second air chamber with said polishing plate rotatably located therein; said polishing plate having a number of through holes is provided with a central threaded rod which is engaged with the bottom end of said driving shaft so that said polishing plate will rotate therewith" (column 3, lines 6 - 12). Again, no language in the claims teach or suggest that the lower casing is attached to the polishing plate. Further, as stated above, this point is substantiated by the fact that the polishing plate rotates, while the lower casing does not rotate when the polishing plate rotates.

The present invention is therefore clearly structurally distinct from Huang, and because of its structural difference, functions differently than Huang. In the present invention, the annular frame is attached to the backing pad at a lower circumferential edge thereof. Operation of the motor of the present invention rotates the backing pad and attached annular frame. In contrast, in Huang, the lower casing is not attached to the

polishing plate; therefore, operation of the motor of Huang rotates the polishing plate but not the lower casing.

In sum, Huang simply does not teach or suggest an annular frame having a circumferential side wall including first and second axially spaced edges, wherein one of the edges is a lower edge of the side wall and is attached to the backing pad, as claimed in claim 1 of the present application.

Turning next to Courson, Courson discloses a rotating abrader with a polygonal pad and dust evacuation; Courson relates specifically to rotating abraders using square or polygonal pads. Courson does not teach or suggest a sanding pad assembly for use with an orbital sander, the assembly including an annular frame having a circumferential side wall including first and second circumferential axially spaced edges, one of the edges being a lower edge of the side wall and being attached to the backing pad, as in claim 1 of the present application. In Courson, if the mounting member (14, 42) is considered an annular frame, Courson does not teach or suggest that a lower edge of a circumferential side wall of the annular frame is attached to the backing pad (30, 40). Instead, in Courson, the backing pad (30, 40) is secured to the flat, lower surface of the annular frame (or in a recess 46 of the frame) that is within the boundary of the circumferential edge (see Figs. 2, 3, and 5; column 4, lines 40 - 41; and column 5, lines 60 - 62). There is simply no attachment of the backing pad to a circumferential edge taught or suggested in Courson. Further, the backing pad of Courson is polygonal, preferably square (column 5, lines 17 - 34), and could not be attached to a circumferential edge because it does not have a circular shape. In the present invention, the backing pad is circular so that it can be attached to the annular frame along the circumferential edge. In any event, Courson does not teach or suggest attaching a backing pad to a lower edge of a circumferential side wall of an annular frame of a sanding assembly, as claimed in claim 1 of the present application. For these reasons, applicant asserts that the present invention as found in claim 1 is patentable over Courson.

Moreover, one skilled in the art would not be motivated to modify the polygonal pad abrader of Courson to obtain the present invention because Courson teaches away from the present invention. Courson teaches that round (i.e., circular) abrasive pads are overly aggressive and easily gouge work surfaces (column 1, lines 7 - 35). This is the reason Courson uses a polygonal backing pad for use with polygonal abrasives (see column 1, lines 7 - 10 and column 2, lines 51 - 61). Hence, one skilled in the art would not be motivated to modify the polygonal pad abrader of Courson to obtain a sanding pad assembly as in the present invention that uses a circular pad. In sum, Courson does not teach or suggest the features of claim 1.


Applicant therefore asserts that claim 1 is not anticipated by Huang or Courson and is therefore allowable. Further, claim 2, depending directly from an allowable base claim, is also allowable. Therefore, applicant requests that the Section 102(b) rejection of claims 1 and 2 based on Huang or Courson be withdrawn.

Applicant submits that the claimed invention clearly distinguishes over the cited references and should be found allowable. This request for reconsideration is felt to be fully responsive to the comments and suggestions of the examiner. Favorable action is requested.

Respectfully submitted,

Miksa Marton

Fildes & Outland, P.C.



Christopher J. Fildes, Attorney
Registration No. 32,132
20916 Mack Avenue, Suite 2
Grosse Pointe Woods, MI 48236
(313) 885-1500